

AMENDMENTS TO THE CLAIMS:

The present listing of claims replaces all prior versions, and listings of claims in the application.

1. (Currently Amended) ~~Method for~~ A method of producing a powder product metal, alloy and composite powders with a mean particle diameter D50 of at most 25 µm, determined using the particle measuring apparatus Microtrac® X 100 to ASTM C 1070-01, from a starting powder with a greater mean particle diameter, characterised in that comprising:

- (a) providing a starting powder having a mean particle diameter D50 of greater than 25 µm;
 - a(b) subjecting said starting powder to the particles of the starting powder are processed in a deformation step, into thereby forming flake-like particles[[,]] of which the having a particle diameter to particle thickness ratio is of between 10:1 and 10,000:1[[,]]; and
 - b(c) subjecting the flake-like particles are subjected of step (b) to comminution grinding in the presence of a grinding aid,
- wherein said powder product is selected from the group consisting of metal powder, alloy powder and composite powder, and said powder product has a mean particle diameter D50 of at most 25 µm as determined using a particle size measuring apparatus in accordance with ASTM C 1070-01.

2. (Currently Amended) ~~Method according to claim 1, characterised in that~~ The method of Claim 1 further comprising a deagglomeration stage step, said deagglomeration step following follows comminution grinding step (c).

3. (Currently Amended) ~~Method according to either claim 1 or claim 2, characterised in that the metal, alloy or composite~~ The method of Claim 1 wherein said powder product has a composition of represented by the following formula I,

$$hA-iB-jC-kD \quad (I)$$

wherein,

- A represents at least one or more of the element[[s]] selected from the group consisting of Fe, Co[[,]] and Ni,
 - B represents at least one or more of the element[[s]] selected from the group consisting of V, Nb, Ta, Cr, Mo, W, Mn, Re, Ti, Si, Ge, Be, Au, Ag, Ru, Rh, Pd, Os, Ir[[,]] and Pt,
 - C represents at least one or more of the element[[s]] selected from the group consisting of Mg, Al, Sn, Cu[[,]] and Zn, and
 - D represents at least one or more of the element[[s]] selected from the group consisting of Zr, Hf[[,]] and rare-earth metals, and
- h, i, j and k indicate the each independently represent percentages by weight of 0 to 100 % by weight, wherein
- ~~h, i, j and k in each case independently of one another represent 0 to 100 % by weight,~~
- with the proviso that the sum of h, i, j and k is 100 % by weight.

4. (Currently Amended) ~~Method according to claim 3, characterised in that~~
The method of Claim 3 wherein,

- ~~A~~ represents ~~one or more of the elements Fe, Co, Ni,~~
- B represents at least one or more of the element[[s]] selected from the group consisting of V, Cr, Mo, W[[,]] and Ti,
- C represents at least one or more of the element[[s]] selected from the group consisting of Mg[[,]] and Al, and
- D represents at least one or more of the element[[s]] selected from the group consisting of Zr, Hf, Y[[,]] and La.

5. (Currently Amended) ~~Method according to either claim 3 or claim 4,~~
~~characterised in that~~ The method of Claim 3 wherein,

- h represents 50 to 80 % by weight,
- i represents 15 to 40 % by weight,

- j represents 0 to 15 % by weight, and
k represents 0 to 5 % by weight

~~with the proviso that the total of h, i, j and k is 100 % by weight.~~

6. (Currently Amended) ~~Method according to any one of claims 1 to 5,~~
~~characterised in that~~ The method of Claim 1 wherein the powder product produced
~~metal, alloy or composite powders have~~ has a mean particle diameter D50 of at
most 15 µm~~[[,]] determined using a Microtrac® X 100 to ASTM C 1070-01.~~

7. (Currently Amended) ~~Method according to any one of claims 1 to 6,~~
~~characterised in that~~ The method of Claim 1 wherein the starting powder comprises
particles having shapes selected from the group consisting of ~~is a powder with~~
spherical shapes and irregular shapes ~~or irregularly shaped particles and has a~~
~~mean particle diameter D50, determined to ASTM 1070-01, measured using a~~
~~Microtrac® X 100, of greater than 25 µm.~~

8. (Currently Amended) ~~Method according to any one of claims 1 to 7,~~
~~characterised in that the~~ The method of Claim 1 wherein deformation step (b) is
carried out in an apparatus selected from the group consisting of a rolling mill, an
eddy mill, a high-energy mill ~~or~~ and an attritor.

9. (Currently Amended) ~~Method according to any one of claims 1 to 8,~~
~~characterised in that~~ The method of Claim 1 wherein said grinding aid is selected
from the group consisting of ~~during comminution grinding~~ liquid grinding aids, waxes,
~~and/or brittle powder~~ and combinations thereof ~~are added as the grinding aid.~~

10. (Currently Amended) ~~Method according to claim 9, characterised in that~~
The method of Claim 9 wherein the grinding aid is selected from the group
consisting of paraffin oil, paraffin wax, metal powder, alloy powder, metal sulphide,
salt, ~~and/or~~ hard material powder and combinations thereof.

11. (Currently Amended) ~~Method according to any one of claims 1 to 10, characterised in that~~ The method of Claim 1 wherein the grinding aid is produced formed *in situ* during comminution grinding step (c).

12. (Currently Amended) ~~Method according to claim 11, characterised in that~~ The method of Claim 11 wherein the grinding aid is produced formed *in situ* by adding a reactive gas which reacts, under the conditions of comminution grinding conditions, with the starting powder while forming a brittle phase.

13. (Currently Amended) ~~Method according to any one of claims 2 to 12, characterised in that~~ The method of Claim 2 wherein the deagglomeration step is carried out in an apparatus selected from the group consisting of a gas contrajet mill, an ultrasound bath, a kneader or and a rotor-stator.

14. (Currently Amended) ~~Method according to any one of claims 2 to 13, characterised in that~~ The method of Claim 2 wherein the deagglomeration step is carried out in the presence of at least one or more material selected from the group consisting of liquids, dispersing aids and[[/or]] binders.

15. (Currently Amended) ~~Metal, alloy and composite~~ The powder with a mean particle diameter D50 of at most 25 µm, determined using the particle measuring apparatus Microtrac® X 100 to ASTM C 1070-01, obtainable by a prepared by the method according to any one of claims 1 to 14 of Claim 1.

16. (Currently Amended) ~~Metal, alloy and composite~~ A powder product with having a mean particle diameter D50 of at most 25 µm, determined using the a particle measuring apparatus Microtrac® X 100 to in accordance with ASTM C 1070-01, characterised in that wherein, until the said powder product has a maximum contraction value is attained, the contraction, determined using a dilatometer to in accordance with DIN 51045-1, is of at least 1.05 times the contraction value of a metal, alloy or composite comparative powder with having identical chemical composition and identical mean particle diameter D50 relative to said powder

product, the powder product and the comparative powder each to be investigated
being compressed to a compressed density of 50 % of the theoretical density before
measuring the contraction values, and further wherein said powder product is
selected from the group consisting of metal powder, alloy powder and composite
powder.

17. (Currently Amended) ~~Mixture containing~~ A mixture comprising:

- (i) 1 to 95 % by weight of ~~a metal, alloy or composite~~ the powder
product of Claim 1; according to claim 15 or 16 and
- (ii) 99 to 5 % by weight of ~~an~~ atomized ~~metal, alloy or composite~~ powder
produced by ~~atomisation~~ atomization, said atomized powder being
selected from the group consisting of atomized metal powder,
atomized alloy powder and atomized composite powder.

18. (New) The method of Claim 1 wherein said particle size measuring
apparatus is a MICROTRAC X 100 particle size measuring apparatus.

19. (New) The powder of Claim 16 wherein said particle size measuring
apparatus is a MICROTRAC X 100 particle size measuring apparatus.